## IN THE CLAIMS

1. (Original) A computer system, comprising:

a home cluster including a first plurality of processing nodes and a home cache coherence controller, the first plurality of processing nodes and the home cache coherence controller interconnected in a point-to-point architecture;

a remote cluster including a second plurality of processing nodes and a remote cache coherence controller, the remote cache coherence controller configured to receive a probe from the home cluster, identify a processing node from the second plurality of processing nodes that owns a cache line corresponding to the probe, and send a targeted probe to the processing node.

2. (Original) The computer system of claim 1, wherein the processing node has the cache line in the owned or modified state.

3. (Original) The computer system of claim 1, wherein information for identifying the processing node that owns the cache line is provided in the probe from the home cluster.

4. (Original) The computer system of claim 1, wherein information for identifying the processing node that owns the cache line is provided by a coherence directory associated with the home cluster.

5. (Original) The computer system of claim 4, wherein the coherence directory maintains information on which clusters and processing nodes own particular cache lines.

6. (Original) The computer system of claim 1, wherein the remote cache coherence controller is further configured to send a directed probe to the processor that owns the cache line associated with the probe.

7. (Original) The computer system of claim 6, wherein the remote cache coherence controller is associated with a pending buffer.

8. (Original) The computer system of claim 7, wherein the remote cache coherence controller is set to receive a single response corresponding to the probe by setting the pending buffer.

9. (Original) The computer system of claim 8, wherein the probe is a read probe.

10. (Original) The computer system of claim 1, wherein the remote cache coherence controller does not send a directed probe if the cache line is also cached shared in the owning cluster.

11. (Original) The computer system of claim 1, further comprising a request cluster that generates a probe request triggering the probe from the home cluster

12. (Original) The computer system of claim 1, wherein each processing node comprises a processor, a memory controller, and a cache.

13. (Original) The computer system of claim 12, wherein each processing node has a portion of the computer system address space.

14. (Original) The computer system of claim 1, wherein the home cache coherence controller forwards the probe before probing home cluster processing nodes.

15. (Original) The computer system of claim 1, wherein the home cache coherence controller forwards the probe after sending probes to home cluster processing nodes.

16. (Original) A method for providing owning node information, the method comprising:

receiving a request for ownership of a memory line from a request cluster, the request cluster comprising a plurality of request cluster processing nodes;

identifying owning node information associated with the request for ownership at a home cluster, the home cluster comprising a plurality of home cluster processing nodes; and

maintaining owning node information in a coherence directory associated with the home cluster.

17. (Original) The method of claim 16, wherein the request for ownership of the memory line is a read block modify request.

18. (Original) The method of claim 16, wherein the request for ownership of the memory line is a change to dirty request.

19. (Original) The method of claim 16, wherein the request for ownership of the memory line is a validate block request.

20. (Original) The method of claim 16, further comprising maintaining owning cluster information in the coherence directory.

21. (Original) The method of claim 16, further comprising receiving a subsequent probe request from the request cluster.

22. (Original) The method of claim 16, further comprising determining if the state of a memory line associated with the subsequent probe is in the owned or modified state.

23. (Original) The method of claim 16, further comprising sending a targeted probe to an owning cluster if the state is owned or modified.

24. (Original) The method of claim 23, wherein the targeted probe includes owning node information.

25. (Original) The method of claim 24, wherein the targeted probe allows probing of a single processing node in the owning cluster.

26. (Original) An apparatus for providing owning node information, the apparatus comprising:

means for receiving a request for ownership of a memory line from a request cluster, the request cluster comprising a plurality of request cluster processing nodes;

means for identifying owning node information associated with the request for ownership at a home cluster, the home cluster comprising a plurality of home cluster processing nodes; and

means for maintaining owning node information associated with the home cluster.

27. (Original) The apparatus of claim 26, further comprising means for maintaining owning cluster information.

28. (Original) The apparatus of claim 26, further comprising means for receiving a subsequent probe request from the request cluster.

29. (Original) The apparatus of claim 26, further comprising means for determining if the state of a memory line associated with the subsequent probe is in the owned or modified state.

30. (Original) The apparatus of claim 26, further comprising means for sending a targeted probe to an owning cluster if the state is owned or modified.

31. (Original) The apparatus of claim 30, wherein the targeted probe includes owning node information.

32. (Original) The apparatus of claim 31, wherein the targeted probe allows probing of a single processing node in the owning cluster.

33. (Original) A computer readable medium comprising computer code for managing owning node information, the computer readable medium comprising:

computer code for receiving a request for ownership of a memory line from a request cluster, the request cluster comprising a plurality of request cluster processing nodes;

computer code for identifying owning node information associated with the request for ownership at a home cluster, the home cluster comprising a plurality of home cluster processing nodes; and

computer code for maintaining owning node information associated with the home cluster.

34. (Original) The apparatus of claim 33, further comprising computer code for maintaining owning cluster information.

35. (Original) The apparatus of claim 33, further comprising computer code for receiving a subsequent probe request from the request cluster.